

In the Claims:

1. (Currently amended) A stereoscopic image display apparatus comprising:
a light source radiating light of a wavelength in a predetermined wavelength range;

~~a one-dimensional spatial modulator configured to generate an arbitrary phase distribution using including one-dimensionally arrayed elements having top surfaces, the elements being that are independently driven such that the entire top surface of each element selectively moves upward and downward during operation of the display apparatus; and~~

~~a scan unit scanning the light to a predetermined direction during operation of the display apparatus to display a stereoscopic image, the light being from said light source, having entered into said one-dimensional spatial modulator and having been modulated therein.~~

2. (Currently amended) The stereoscopic image display apparatus according to claim 1, wherein said scan unit scans the light modulated by said one-dimensional spatial modulator in a direction perpendicular to an arraying direction of the elements of said one-dimensional spatial modulator to achieve horizontal parallax.

3. (Currently amended) The stereoscopic image display apparatus according to claim [[1]] 2, wherein ~~said light source is provided with laser oscillators radiating laser beams having wavelengths in predetermined wavelength ranges severally corresponding to red, green and blue~~ said scan unit is a first scan unit rotating about a first scan unit axis and the apparatus further comprises a second scan unit rotating about a second scan unit axis orthogonal to the first scan unit axis, the second scan unit scanning the modulated light in a direction parallel to an arraying direction of the elements of said one-dimensional spatial modulator to achieve vertical parallax.

4. (Previously presented) The stereoscopic image display apparatus according to claim 1, said apparatus further comprising:

~~a diffuser panel diffusing modulated light scanned by said scan unit to display~~

the stereoscopic image.

5. (Original) The stereoscopic image display apparatus according to claim 1, wherein said one-dimensional spatial modulator comprises a Grating Light Valve.

6. (Currently amended) A stereoscopic image display apparatus comprising:
a light source radiating light having a wavelength in a predetermined wavelength range;

a Grating Light Valve device having including a plurality of ribbon-like elements having top surfaces, the Grating Light Valve being and configured to generate an arbitrary a phase distribution by independently driving each ribbon-like element so that all of the top surface of each element selectively moves up and down during operation of the display apparatus;

a collimator lens making the light modulated by said Grating Light Valve device into parallel ray rays;

a scan unit scanning the parallel ray rays coming from said collimator lens;

a lens performing Fourier transformation on the scanned ray rays; and

a diffuser panel diffusing the ray Fourier transformed rays by said lens to display a stereoscopic image.

7. (Currently amended) A stereoscopic image display apparatus comprising:
means for radiating coherent light;

means for generating an arbitrary phase distribution by spatially modulating the coherent light in a one-dimensional direction, wherein the means for spatially modulating is controlled in part according to a Fourier transformation function; and

means for scanning the modulated light in to a predetermined direction orthogonal to said one-dimensional direction and in a direction parallel to said one-dimensional direction to display a stereoscopic image.

8. (Currently amended) A stereoscopic image display method comprising:
radiating coherent light;

generating an arbitrary phase distribution by spatially modulating the coherent light in a one-dimensional direction in accord with a Fourier transformation function; and displaying a stereoscopic image by scanning the modulated light to a predetermined direction orthogonal to said one-dimensional direction at a first speed.

9. (New) A stereoscopic image display apparatus according to claim 1, wherein the scan unit is a polygon mirror and the apparatus further comprises a volume type hologram device.

10. (New) A stereoscopic image display apparatus according to claim 2, wherein the scan unit is a galvano-mirror and the apparatus further comprises a multistage mirror having a plurality of stacked reflection surfaces, wherein each surface has an angle that is different than angles of the other of said reflection surfaces, for scanning the light scanned by the scan unit in a direction intermediate said perpendicular direction to the arraying direction of the elements of said one-dimensional spatial modulator and parallel to the arraying direction of the elements.

11. (New) A stereoscopic image display apparatus according to claim 3, wherein the first and second scanning units are galvano-mirrors.

12. (New) A stereoscopic image display method according to claim 11, further comprising:

a collimator lens to parallelize the modulated light before scanning by the first and second scanning units during operation of the display apparatus; and

a Fourier transformation lens for transforming the modulated, parallelized, and two-dimensionally scanned light during operation of the display apparatus.

13. (New) A stereoscopic image display method comprising according to claim 8, further comprising:

scanning the modulated light to a direction parallel to said one-dimensional direction at a second speed that is different than said first speed, wherein said spatial

modulation is controlled based on an amount of shifting of the scanned light resulting from said differing scanning speeds.

14. (New) A stereoscopic image display method according to claim 8,
wherein:

the spatial modulation is performed with a modulation device; and
the modulation device rotates during performance of the method.